

UNITED STATES DISTRICT COURT
DISTRICT OF RHODE ISLAND

DECISION AND ORDER

WILLIAM E. SMITH, United States District Judge.

For over six years Plaintiffs Uniloc USA, Inc. and Uniloc Singapore Private Limited (Uniloc) and Defendant Microsoft Corporation (Microsoft) have battled in a high stakes patent dispute in this Court. It has taken them to the Federal Circuit once, and finally to trial where Uniloc scored a massive jury verdict (purportedly the fifth largest patent verdict in history). Before the Court are numerous post-trial motions. After careful consideration of the arguments and the evidence, and mindful of the limitations placed upon the Court in ruling upon a post-trial motion for judgment as a matter of law (JMOL), the Court grants JMOL of non-infringement in Microsoft's favor. And while this holding on non-infringement arguably renders moot many, if not all, of the remaining issues raised by these motions, the Court believes it is both reasonable and potentially useful in the long run, given the breadth and complexity of the issues raised, to tackle a number

of other important issues raised by the parties' motions, including willfulness and invalidity.

I. Background¹

A. The '216 Patent

The patent-in-suit is U.S. Patent No. 5,490,216 ('216 patent) entitled "System for Software Registration," issued on February 6, 1996. The inventor is Mr. Ric Richardson, an Australian citizen who founded Uniloc and made the claimed invention in Australia in or around 1991 or 1992.² In broad terms, the patent is directed to a method of reducing unlicensed use of software through casual copying. The technology is intended to deter unauthorized copying by a purchaser of a piece of software by locking the software to a user and allowing it "to run in a use mode on a platform if and only if an appropriate licensing procedure has been followed." '216 patent, col. 2, 11. 53-55. Claim 19, the sole independent claim at issue, reads as follows:

A remote registration station incorporating remote licensee unique ID generating means, said station forming part of a registration system for licensing execution of digital data in a use mode, said digital data executable

¹ The reader in search of more detail should consult the prior decisions in this case: 447 F. Supp. 2d 177 (D.R.I. 2006) (claim construction); No. 03-cv-440, Doc. No. 199, (D.R.I. Oct. 19, 2007) (summary judgment); 290 Fed. Appx. 337, 2008 WL 3539749 (Fed. Cir. 2008) (reversal-in-part and remand); 2009 WL 691204 (D.R.I. Mar. 16, 2009) (Daubert and motions in limine).

² Mr. Richardson founded Uniloc Australia and assignee Uniloc Singapore to develop and sell his invention. Uniloc USA holds the exclusive right to the invention in the United States.

on a platform, said system including local licensee unique ID generating means, said system further including mode switching means operable on said platform which permits use of said digital data in said use mode on said platform only if a licensee unique ID generated by said local licensee unique ID generating means has matched a licensee unique ID generated by said remote licensee unique ID generating means; and wherein said remote licensee unique ID generating means comprises software executed on a platform which includes the algorithm utilized by said local licensee unique ID generating means to produce said licensee unique ID.

The relevant terms (all of which are in play at this stage) were construed as follows:

registration system	a system that allows digital data or software to run in a use mode on a platform if and only if an appropriate licensing procedure has been followed
licensee unique ID	a unique identifier associated with a licensee
use mode	a mode that allows full use of the digital data or software in accordance with the license
local licensee unique ID generating means	in functional terms, to generate a local licensee unique ID the structure to perform this function must be a summation algorithm or a summer or an equivalent
remote licensee unique ID generating means	in functional terms, to generate a remote licensee unique ID The structure to perform this function must be a summation algorithm or a summer or an equivalent

mode switching means	in functional terms, to permit the digital data or software to run in a use mode if the locally generated licensee unique ID matches with the remotely generated licensee unique ID the structure to perform this function must be program code which performs a comparison of two numbers or a comparator or an equivalent of such program code or comparator
has matched	a comparison between the locally generated licensee unique ID and the remotely generated licensee unique ID shows that the two are the same
includes the algorithm utilized by said local licensee unique ID generating means to produce said licensee unique ID	includes the identical algorithm used by the local licensee unique ID generating means to produce the licensee unique ID
algorithm	a set of instructions that can be followed to carry out a particular task

B. Product Activation

The accused technology is Microsoft's patented Product Activation system (PA). This feature is contained in software products sold through retail distribution worldwide, including the accused Microsoft Office XP, Windows XP and Office 2003 products.³ According to Aiden Hughes, the writer of the original code for Microsoft in 1997 that evolved into PA, the goal of the feature was to limit the number of computers on which software was installed by

³ PA is bypassed for original equipment manufacturer (OEM) licenses whereby, for example, a person purchases a Dell laptop with Windows or Office software already installed, and also for high volume license agreements with corporations. Thus, only about 10-20% of total sales of the accused software involve the activation at issue here.

enforcing the limits specified in the applicable product license agreement, or EULA (End User License Agreement). (Trial Ex. Z-2 ("This technology is geared towards reducing software piracy occurring today when end users pass along a copy of their floppies or CDs to a neighbor or install software products off of original CDs onto several machines.").)

There is no dispute as to how the PA system operates. Printed on each jewel box of a retail software product is a 25-character alphanumeric string called a Product Key (e.g., MQ9WT-3D8PY-6VF76-GMHVX-DCXFM). No two pieces of software have the same Product Key. A user types the Product Key into a computer to install a piece of software. If the Product Key is valid and the user agrees to the EULA that appears on his or her computer screen, the software is then installed but not yet activated.⁴ Also at this stage, a Product ID (PID) is created on the user's computer from a combination of data sources, including the typed-in Product Key, Microsoft Product Code (from "bits" on the software CD) and a random number derived from the user's computer. A hardware identifier (HWID) is also generated on the user's machine using components of that computer.

Activation of the software is only achieved when and if a user elects to activate. At that time, the software communicates the

⁴ The allowed use during this "grace period" is an important issue and the details are discussed infra at Section IV(D).

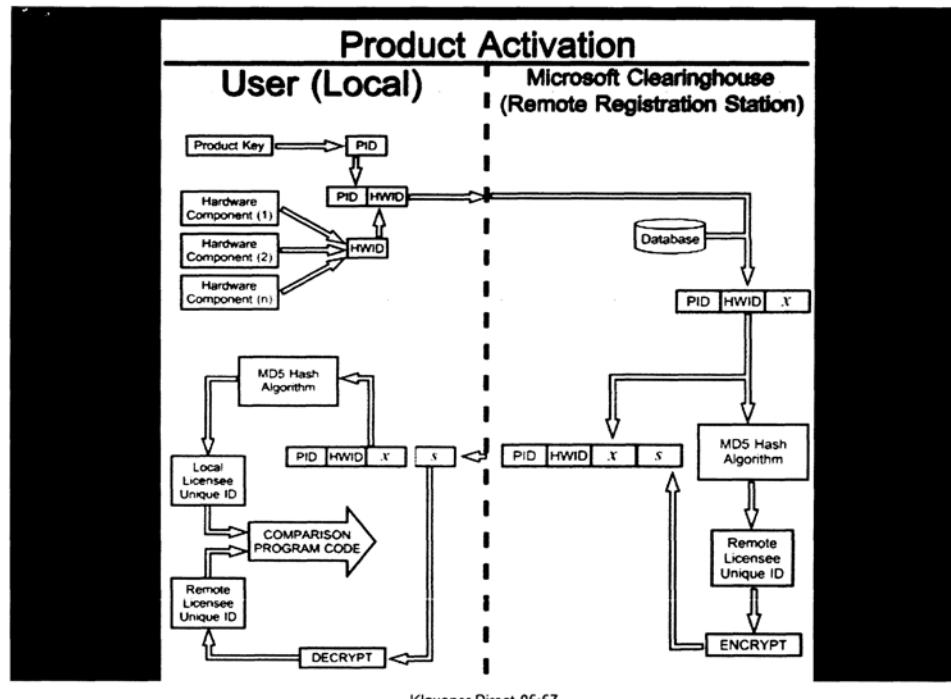
following information via the internet⁵ to the remote Microsoft Clearinghouse server located in Redmond, Washington: the PID; the HWID; and other activation-specific data generated by Microsoft.⁶ Together, this sequence of data (described as "one big string" by Microsoft's expert Dr. Dan Wallach) forms a "digital license" request sent to the remote Clearinghouse. Once this data (also called the "license object") arrives at the Clearinghouse and is confirmed as valid, it is put through a software algorithm. The algorithm used depends on the product: for Office it is the MD5 (message digest) algorithm, and for Windows the SHA-1 (secure hash) algorithm. After processing by the algorithm, the result is a shortened fixed-bit output (what Microsoft deems the "license digest" and Uniloc tags the "remote licensee unique ID"). The output is encrypted with a secret, private key known only to Microsoft. The result of the encryption, or the digital signature, is concatenated with the original license data and sent back to the user's computer.

The software uses a public key to decrypt the digital signature and recover the hashed license. The user side software also inputs the concatenated original license data into the same MD5 or SHA-1 algorithm as was used on the data at the

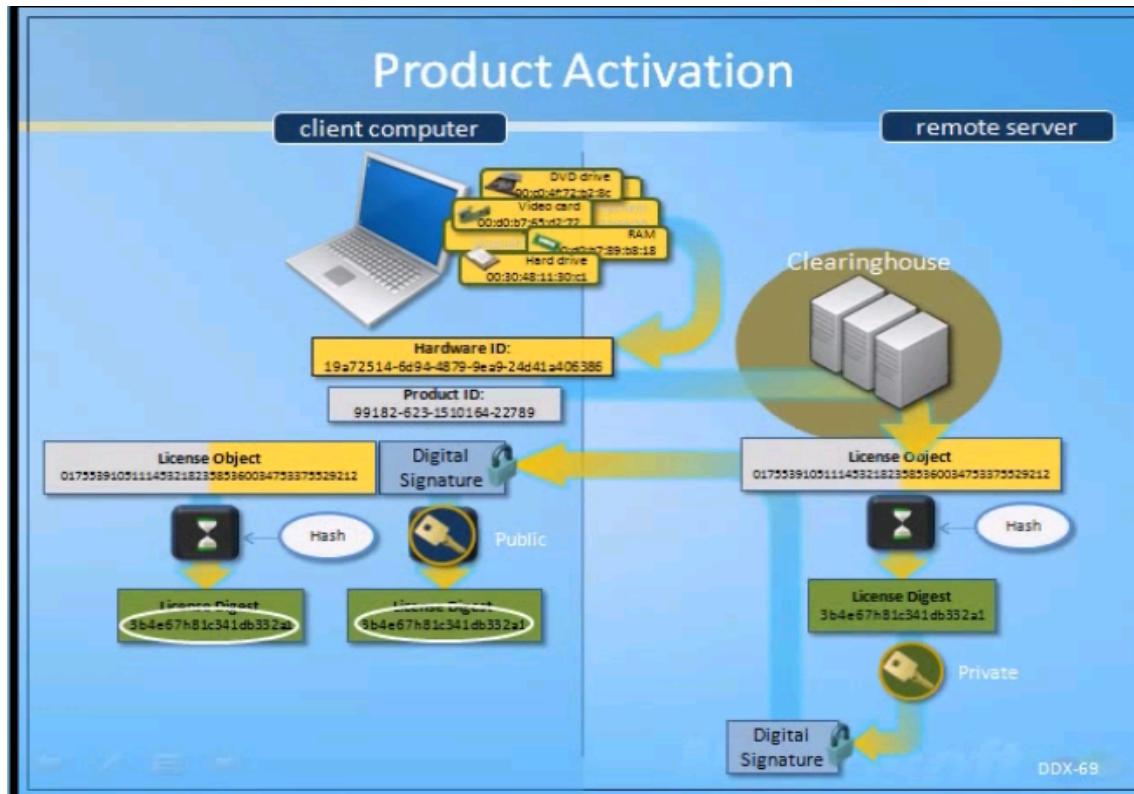
⁵ Uniloc dropped its theory regarding telephone activation.

⁶ Uniloc's expert referred to this data as "X": activation date, expiration date, and so forth.

Clearinghouse. Those two values, the decrypted signature (what Microsoft describes as the "license digest" and Uniloc deems the "remote licensee unique ID") and output of the user side algorithm (what Microsoft also describes as the "license digest" and Uniloc deems the "local licensee unique ID") are compared. If they are the same, the software accepts the digital license as genuine and the software is activated.⁷



⁷ (Trial Ex. M-9 and N-9A (DDX-69).) Though some details are disputed, these diagrams fairly represent the system.



II. Procedural Travel

Uniloc sued on September 26, 2003. Following discovery, briefing, a technical tutorial and a Markman hearing the parties submitted, and the Court construed, 24 claims. Uniloc contended approximately eight aspects of PA infringed five independent (and multiple dependent) claims of the '216 patent, under a handful of assorted theories. In October of 2007, this Court granted summary judgment in Microsoft's favor on non-infringement. On appeal, Uniloc narrowed its case to Claims 12 and 19, contending the output of the PA algorithm constituted a "licensee unique ID." In 2008, the Federal Circuit affirmed this Court's claim construction but

found a genuine issue of material fact as to whether PA uses the same algorithm on both the user and server side to generate licensee unique IDs, finding this Court erred in concluding that it did not.⁸ See Uniloc USA, Inc. v. Microsoft Corp., 290 Fed. Appx. 337, 342-43 (Fed. Cir. 2008).⁹

Following remand, with the case narrowed and theories more defined, Microsoft sought leave once again to move pursuant to Rule 56 on several remaining issues of non-infringement and invalidity (some of which this Court did not reach the first time around and some newly raised). Uniloc opposed this second bite at the summary judgment apple and pressed for a trial date. The Court agreed with Uniloc but urged Microsoft to preview its arguments in its pretrial memorandum and, if appropriate, raise them at the Rule 50 stage.¹⁰

⁸ In dissent, Chief Judge Michel would have affirmed judgment under Microsoft's construction of licensee unique ID that this Court and the majority rejected: that the inputs must include at least one piece of personal information (PA uses no such inputs).

⁹ On this point (the use of the same algorithm) there seems to be no dispute that PA does use the same algorithm on both sides of the system. This Court clearly made a mistake on this point, which even Microsoft acknowledged at oral argument before the Circuit. The parties skirmish over this in another context discussed below, but one wonders why Uniloc did not simply file a motion for reconsideration at the time. Perhaps time, money and aggravation could have been avoided if it had done so.

¹⁰ This background gives some needed context to one of the dominant themes of Uniloc's argument -- that Microsoft's contentions fail because the jury rejected them. While this is correct as to some issues and arguments, the Court always intended to address some of Microsoft's arguments for judgment as a matter of law at the appropriate time. Having been strongly opposed to allowing these arguments to be heard before trial, Uniloc's attempt

Following motions in limine and Daubert challenges to damages experts, Uniloc withdrew its claim for infringement of Claim 12 the evening before trial began. After ten days of trial with ten live witnesses and ten witnesses by deposition, the jury found: (1) Microsoft infringed Claim 19; (2) Claim 19 was valid; (3) infringement was willful; and (4) Uniloc was entitled to \$388,000,000 in damages.

Microsoft seeks a judgment that it does not infringe Claim 19, or alternatively that Claim 19 is invalid either because it is anticipated or obvious. It further contends no jury could reasonably have found infringement was willful, or award such excessive damages. Microsoft's overall theme is that the jury failed to grasp the complexity of the case (and Microsoft's defenses) due to Uniloc's "ceaseless rhetoric and innuendo"; Uniloc defends its verdict with vigor, saying Microsoft's motions are nothing but a pitch for a "do-over" in the form of a bench trial, while all this Court needs is its rubber stamp. For its part, Uniloc seeks enhanced damages, prejudgment and postjudgment interest and a permanent injunction.

III. Judgment As a Matter of Law (JMOL) Standard of Review

First Circuit standards define the procedural contours of the instant review; Federal Circuit precedent applies on substantive

to use the verdict as a shield to Microsoft's legitimate summary judgment motions is somewhat overreaching.

patent law issues. See Go Med. Indus. Pty., Ltd. v. Inmed Corp., 471 F.3d 1264, 1272 (Fed. Cir. 2006) ("On procedural issues not unique to patent law, we apply the standard of review of the regional circuit.").

JMOL is appropriate when "a party has been fully heard on an issue during a jury trial and the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue." Fed. R. Civ. P. 50(a). Post-trial, JMOL is called for under Fed. R. Civ. P. 50(b) when the facts and inferences are one-sided and "point so strongly and overwhelmingly in favor of the movant that a reasonable jury could not have returned the verdict." Acevedo-Diaz v. Aponte, 1 F.3d 62, 66 (1st Cir. 1993) (internal citation omitted); see Soto-Lebron v. Fed. Express Corp., 538 F.3d 45, 56 (1st Cir. 2008). The Court must not evaluate "the credibility of witnesses, resolve conflicts in testimony, or evaluate the weight of evidence," but rather view the evidence in the light most favorable to Uniloc, giving it all fair and reasonable inferences. Gibson v. City of Cranston, 37 F.3d 731, 735 (1st Cir. 1994). Of course, review of the jury's verdict is also affected by the applicable burden of proof. See Mentor H/S, Inc. v. Med. Device Alliance, Inc., 244 F.3d 1365, 1375 (Fed. Cir. 2001) (noting in context of invalidity based on clear and convincing evidence that courts grant JMOL for the party bearing the burden of proof only in extreme cases).

IV. Non-infringement

Microsoft first asserts that there is no evidence to support the conclusion that it directly infringed Claim 19. It then argues no reasonable jury could find infringement by a preponderance of evidence as to four of the elements Uniloc was required to prove infringed: (i) "licensee unique ID"; (ii) "licensee unique ID generating means"; (iii) "registration system"; and (iv) "mode switching means."

A. Direct Infringement

For reasons that will become obvious in the discussion that follows, the issue of direct versus indirect infringement received no attention at trial. In its pretrial memorandum, Uniloc discussed the law of direct infringement and indirect infringement under 35 U.S.C. § 271(b). The parties submitted agreed upon jury instructions on both theories. At trial, it was not clear which theory (or theories) Uniloc was actually pressing. Following most of the evidence, and after Microsoft orally summarized its Rule 50 motions, Uniloc dropped its request that the jury be instructed on indirect infringement. (See Stip. regarding Pl.'s Claims for Infringement of Claim 12 and for Indirect Infringement (Doc. No. 365).) Uniloc therefore was required to prove Microsoft directly infringed Claim 19. Microsoft contends that Uniloc has failed to prove the statutory requirements of direct infringement.

Before confronting the substance of the dispute, there is a waiver hurdle to clear. Microsoft did not make this precise argument either before or during trial; rather, it made broad non-infringement arguments (literal and equivalents) at all stages, with limitation-specific details. Although in general regional circuit law governs procedural aspects of a JMOL motion, where (as here) the "precise issue pertains uniquely to patent law" Federal Circuit authority controls. Duro-Last, Inc. v. Custom Seal, Inc., 321 F.3d 1098, 1105-06 (Fed. Cir. 2003) (holding that pre-verdict JMOL motion on inequitable conduct and on-sale bar did not preserve right to make post-verdict motion on obviousness where defenses required different elements of proof). The requisite pre-verdict specificity varies with the circumstances of each case, and the key inquiry is whether the motion fairly informs the opposing party of its alleged evidentiary deficiencies. See Junker v. Eddings, 396 F.3d 1359, 1363 (Fed. Cir. 2005). Here, given the overlap in proof and agreement as to how PA works as between the user and Clearinghouse, Microsoft's post-verdict direct infringement challenge is appropriate. Microsoft's failure to highlight the issue was no doubt a consequence of its belief that Uniloc was proceeding on a theory of indirect infringement (or both theories) until its casual dismissal of its indirect theory just before closing argument. This is not a case of a new argument thwarting

the purposes of Rule 50 because Uniloc's opportunity to shore up its proof has passed.

On the substance, the statute provides that "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, [directly] infringes the patent." 35 U.S.C. § 271(a). The parties agree Claim 19 is a system, or apparatus, claim and not a method or process for locking software.¹¹ It calls not for a single device "but rather a system comprising multiple distinct components." NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1313 (Fed. Cir. 2005) ("[T]he nature of those components . . . permits their function and use to be separated from their physical location."). "To infringe an apparatus claim, the device must meet all of the structural limitations." Cross Med. Prods., Inc. v. Medtronic Sofamore Danek, Inc., 424 F.3d 1293, 1311-12 (Fed. Cir. 2005); see Hewlett-Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1468 (Fed. Cir. 1990) ("[A]pparatus claims cover what a device is, not what a device does.")

Microsoft contends Claim 19 requires both a local side and remote side, and, therefore, the entire accused system that

¹¹ Of the 20 claims in the '216 patent all but 4 claim a "registration system." 3 others claim a method, leaving oddball Claim 19 (a "remote registration station . . . forming part of a registration system").

allegedly infringes Claim 19 does not exist until the local side user installs and runs the PA software on his computer. Thus, "there can be no direct infringement of an apparatus claim by one entity where a third party completes the apparatus, such as by establishing one of its elements." (Def.'s Mot. For JMOL (Doc. 371-2 p. 45) (relying in part on Cross Med. Prods., 424 F.3d at 1310-11 (finding that accused product did not directly infringe claim term "operatively joined" where limitation of anchor seat contacting bone was not met until surgeon connected them))).

Despite its common sense appeal, the argument is ultimately unconvincing. A reasonable jury could find Microsoft makes, uses or sells the entire apparatus claimed, and Cross Medical does not compel a different result. Claim 19 sets forth a handful of means the system must contain, and there is no "participation" or "control" limitation relative to the end-user. See Fantasy Sports, Props., Inc. v. SportsLine.com, Inc., 287 F.3d 1108, 1119 (Fed. Cir. 2002). Accepting Microsoft's argument that the local side of Claim 19 requires an end-user's participation, similar to the surgeons' participation in Cross Medical, would be akin to importing a method step into this software system -- something the language of Claim 19 does not support.

What is more, there can be little doubt Microsoft makes, uses and controls the Clearinghouse server and is the "mastermind" of the software, causing each local and remote component to (arguably)

complete "infringement" by the entire system. BMC Resources, Inc. v. Paymentech, L.P., 498 F.3d 1373, 1381-82 (Fed. Cir. 2007) (discussing joint infringement of patented process); see also NTP, 418 F.3d at 1313-18 (affording broad interpretation to "use" under § 271(a) in considering whether use of system was within the United States based on control and receipt of benefit); Inline Connection Corp. v. AOL Time Warner Inc., 472 F. Supp. 2d 598, 599-600 (D. Del. 2007) (holding that accused infringer could not avoid liability on the basis that it did not provide all components and thus did not "use" entire system); Civix-DDI, LLC v. Cellco P'ship, 387 F. Supp. 2d 869, 883-86 (N.D. Ill. 2005) (rejecting argument that to directly infringe a system claim infringer must directly use each component). The bottom line is that nothing Microsoft offers or this Court has reviewed supports finding that Claim 19 cannot, as a matter of law, capture direct infringement by Microsoft in this case.¹²

B. "Licensee Unique ID" (LUID)

Turning to the individual limitations, "[i]t is . . . well-settled that each element of a claim is material and essential, and

¹² Uniloc's reliance on Intel Corp. v. United States Int'l Trade Comm'n, 946 F.2d 821, 831-32 (Fed. Cir. 1991) is not helpful. Claim 19 does not neatly fit the "programmable" or "capable" family of cases, which in any event has been denied the broad reading Uniloc proffers. See, e.g., Fantasy Sports Props., Inc. v. SportsLine.com, Inc., 287 F.3d 1108, 1117-18 (Fed. Cir. 2002). Moreover, Microsoft is correct that the "executable" language in the claim refers to the commercial software meant to be protected (i.e., Office or Windows). See '216 patent, col. 2, ll. 14-23.

that in order for a court to find infringement, the plaintiff must show the presence of every element or its substantial equivalent in the accused device." Lemelson v. United States, 752 F.2d 1538, 1551 (Fed. Cir. 1985). Infringement is a question of fact reviewed for substantial evidence, and Uniloc bears the burden of proof by a preponderance of evidence. Finisar Corp. v. DirecTV Group, Inc., 523 F.3d 1323, 1332 (Fed. Cir. 2008). The absence of even one limitation, however, defeats an action for literal infringement. Bayer AG v. Elan Pharm. Research Corp., 212 F.3d 1241, 1247 (Fed. Cir. 2000).

On this first limitation at issue, the Court construed a LUID as a unique identifier associated with a licensee. Although Uniloc's theory regarding the LUID was a moving target through the earlier stages of this litigation, its final LUID theory, pressed at trial, targeted the output of the PA algorithm on both the local and remote sides.

The issue of uniqueness has been hotly contested from the start. See Uniloc USA, Inc. v. Microsoft Corp., 447 F. Supp. 2d 177, 184-85 (D.R.I. 2006) (rejecting Microsoft's proposed construction that uniqueness of the identifier must be "one-of-a-kind" akin to DNA, and holding that the LUID will "consist of varying levels of uniqueness that are wholly dependent upon the inputs"); Uniloc USA, 290 Fed. Appx. at 342 n.1, 344 (agreeing with construction and considering "unique identifier" a jury question);

(Trial Tr. 136:25-138:5, Apr. 7, 2009 (declining to give precise definition but instructing jury that "unique" should be sufficient to provide some sufficiently distinguishing identifier of the licensee).) In its motion, Microsoft does not seriously dispute that its license digest is mathematically a unique value. Its primary challenge goes to the rest of the definition -- whether it is an identifier associated with a licensee. This is unquestionably a close call. But ultimately the jury's answer on this question must stand, because it is supported by the trial record.¹³

Uniloc's argument demonstrates the inevitable blending of unique and associated in the context of the claimed invention. As expressed by Mr. Klausner, "the Product Key and the PID and the license and the hash digest are all associated [with the licensee]

¹³ Microsoft argues that "unique" renders Claim 19 indefinite, but it does not. (Microsoft did not waive the point; it has always been on the radar screen -- see Doc. No. 209-2 p.8 n.4; Doc. No. 291 p.1-2, 21 n.4.) The Court disagrees that a person skilled in the art could not determine whether a system such as PA creates a unique value. In the shadow of the "exacting standard" for indefiniteness, it is of no matter that experts squabble over precise mathematical bounds. Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008). In an anti-piracy software locking system, reasonable meaning of a not one-of-a-kind unique identifier can attach even without the precise bookend definition Microsoft seeks (without ever suggesting one). Defining unique by what it is not, rather than affirmatively stating what it must be, does not in this case make it "insolubly ambiguous" under 35 U.S.C. § 112 ¶ 2, nor does it prevent fair notice of what is claimed. Id. at 1250 (citations omitted); see Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001) (claim is indefinite if "reasonable efforts at claim construction prove futile").

because they're all unique, and there's no one else in the world that has that." (Trial Tr. 173:4-7, Mar. 25, 2009.) Since no two Product Keys are alike, a "user associates themselves via their typing it in." (Id. at 11-18.) From there, the PID (generated in part from the Product Key) is unique and associated; and since the PID is unique and associated, the algorithm output (generated in part from the PID) follows suit:

The user has to enter a valid product key, so in this case the user is entering the information and then starts to type in the product key, and that's now the product key that's associated with that user. The user has entered it . . . [a]nd that association, as we will later see, maintains between the user and the product key and its derivatives throughout the Microsoft system, going from the local side to the remote side and back."

(Trial Tr. 144:1-10, Mar. 24, 2009.)

Uniloc also relied on Microsoft documents that refer to the Product Key and PID as unique numbers or sequences that are customer-specific. (See, e.g., Trial Ex. 248 ("customer-specific Product ID" and "user's unique Product Key"); Trial Ex. 129 ("program uses the Product Key to create the customer's unique, 20-digit Product ID number") (all emphasis added).)

Microsoft highlights several flaws in Uniloc's theory. First, it says that by focusing on the inputs Uniloc skims past the one-way algorithm that purposefully destroys the ability to connect back to those values. Microsoft portrays this as a fundamental difference in the systems because PA was designed to maintain licensee anonymity, and destroy any association. It also points to

undisputed evidence that the output is temporary and not kept by Microsoft. Next, it argues that Uniloc's starting block, the Product Key, is at most connected with software and not a person (because the evidence showed many people can type the same Product Key into multiple computers and thus create many PIDs and LUIDs).¹⁴ See Uniloc USA, 290 Fed. Appx. at 348 (Michel, C.J., dissenting in part) ("[T]he Product Key at most identifies a particular copy of the software, and does not personally identify the user of that copy."). Finally, according to Microsoft, upon a careful read many so-called "contemporaneous" documents do not discuss an association between the PA algorithm output and an actual person. (See, e.g., Trial Ex. 129 ("like fingerprints on people, the Product ID is different for any two customer licenses); Trial Ex. 246 ("Product ID is unique to that software installation") (all emphasis added).)

Microsoft's argument is not without support and certainly not frivolous, as Uniloc suggests. And, it highlights the gray area in which the parties have battled on this issue: on one hand, the unique association called for cannot solely come from platform-related information, or the HWID, Uniloc USA, 290 Fed. Appx. at 343-44; yet on the other, it must not be required to include personal information about the licensee. Id. at 344 (holding that vendor-supplied information like Product Key "could be the basis

¹⁴ (See Trial Tr. 196:23-197:6, Mar. 25, 2009 (Mr. Klausner agreeing that with reinstalls using the same Product Key, the odds you would get the same PID are "very, very low.").)

for" a LUID as information unique to, and not necessarily about, the user). Just as unique is a relative term in the context of the '216 invention so too must association be a relative term. Uniloc's evidence centers on the notion that an association with a licensee can be created simply by virtue of the uniqueness of the LUID at the start of the process, because no other user can generate the same LUID. The Court cannot outright reject this theory as a matter of law. The purpose of the system in the '216 patent is to protect a piece of software and control its distribution to and use by unlicensed users. Given Uniloc's evidence as to the inputs that create the LUID, including Mr. Klausner's testimony, a reasonable jury could conclude that an association between the output and the licensee is created -- even if it is only temporary. In other words, even if the initial associative inputs are mathematically destroyed by the one-way algorithm, the output they create can still be associated as of the moment it is produced. Nothing in the '216 patent requires the type of permanent database registry Microsoft suggests, akin to the way the DMV tracks a driver's license to one motorist. Even though it is not possible for Microsoft's PA to later rewind and link the LUID to an individual licensee, it is not illogical to find that PA creates an initial association that carries through the activation process and allows Microsoft to, at the end of the day, sufficiently "characterize the licensee" to meet its goal of

enforcing the EULA and reducing unlicensed use. '216 patent, col. 5, l. 64. In sum, while Microsoft may very well have convinced this Court if it was the fact-finder, with substantial evidence on both sides of the issue the jury's finding must stand.¹⁵

C. "Licensee Unique ID Generating Means"

Claim 19 requires both local and remote LUID generating means. The accused structure is the MD5 algorithm in Office, and the SHA-1 algorithm in Windows.¹⁶ The question is whether sufficient evidence supports the jury's conclusion that MD5 and SHA-1 qualify as a "summation algorithm or a summer and equivalents thereof." The jury found that they did; Microsoft argues the verdict ignores the specification and unlawfully expands the limitation. Unsurprisingly, Uniloc takes the opposite view.

The LUID generating means is a means-plus-function term that "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6. "To determine whether a claim limitation is met literally, where expressed as a means for performing a stated function, the court must compare the accused structure with the

¹⁵ The doctrine of equivalents is discussed *infra* but given that Uniloc barely (if at all) offered the idea in the context of the LUID and devoted a single sentence to it in its brief, it suffices to say literal infringement carried the day on this limitation. See Texas Instruments Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1566-67 (Fed. Cir. 1996).

¹⁶ The functional component is disputed only in the sense that, as discussed, Microsoft argues the output is not a LUID.

disclosed structure, and must find equivalent structure as well as identity of claimed function for that structure." Nomos Corp. v. Brainlab USA, Inc., 357 F.3d 1364, 1369 (Fed. Cir. 2004) (additional citations and emphasis omitted). As to an equivalent structure, the test is "whether the differences between the structure in the accused device and any disclosed in the specification are insubstantial." WMS Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339, 1351 (Fed. Cir. 1999) (citing Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus. Inc., 145 F.3d 1303, 1309 (Fed. Cir. 1998) and Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1222 (Fed. Cir. 1996)). Section 112, ¶ 6 equivalence is a question of fact. See IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1430 (Fed. Cir. 2000). In addition, although a patentee may use generic claim language it does not enjoy unfettered latitude. To obtain the benefit of broad claim terms, a patentee must recite within the specification, and with sufficient definiteness, some structure that performs the function, so one skilled in the art can ascertain the claim's scope. See Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 948 n.1 (Fed. Cir. 2007) (explaining the § 112, ¶ 6 "quid pro quo").

To step back a bit for context, at claim construction the parties agreed the '216 patent disclosed as the relevant structure both software in the form of an algorithm, see col. 11, ll. 53-56, and hardware in the form of a summer, see col. 12, ll. 62-65. As

to the latter, Uniloc has never contended MD5 or SHA-1 is a hardware summer; the contention has always involved the allegedly infringing software. The Court rejected Uniloc's proffered construction of "software (e.g., algorithm)" as an attempt to "generalize the disclosed algorithm to any algorithm." Uniloc USA, 447 F. Supp. 2d at 191-92 ("[W]hen software is linked to the disclosed function, the corresponding structure must be the specific algorithm disclosed in the patent, rather than just 'an algorithm.'").

There is no dispute that the generating means structure is fleshed out only in the sixth embodiment:

The algorithm, in this embodiment, **combines by addition** the serial number 50 with the software product name 64 and customer information 65 and previous user identification 22 to provide registration number 66.

As discussed earlier, **all of the items to be summed**, namely items 50, 64, 65 and 22 must be communicated to the remote licensee unique ID generator by the intending licensee whereby algorithm 51 causes the production of a registration number 66 which matches identically with the locally produced registration number.

'216 patent, col. 11, 11. 53-63; see also fig. 9:

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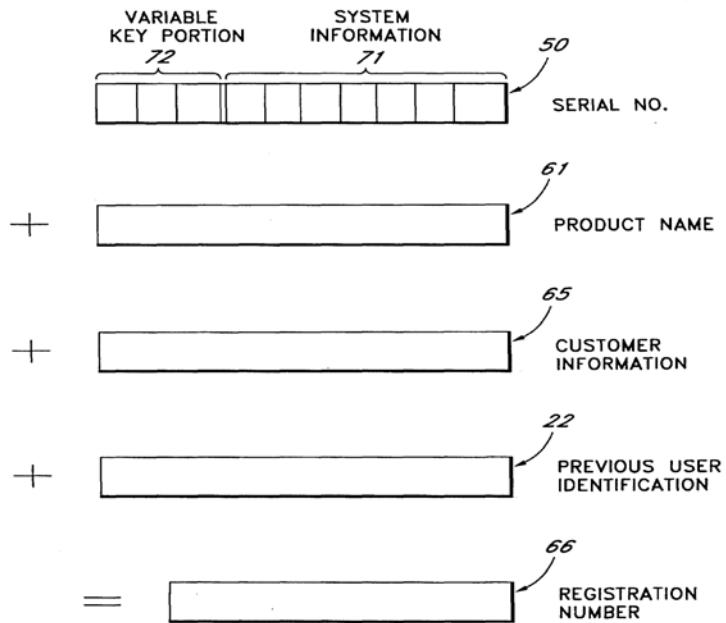


FIG. 9

Receiving no further guidance from the prosecution history, the Court construed the structure as a summation algorithm or summer¹⁷ and equivalents thereof. See Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech., 521 F.3d 1328, 1333 (Fed. Cir. 2008) ("The point of the requirement that the patentee disclose particular structure in the specification and that the scope of the

¹⁷ Relevant to the hardware summer, see '216 patent, col. 12, 11. 62-65 and col. 13, 11. 2-19 ("[S]ummer 89 combines these signals by addition . . . so as to provide a summed output.").

patent claims be limited to that structure and its equivalents is to avoid pure functional claiming."); WMS Gaming, 184 F.3d at 1348-49 (limiting computer implemented means-plus-function term to algorithm disclosed).

At trial, the parties agreed MD5 and SHA-1 are algorithms and there was little, if any, dispute over their operation.¹⁸ MD5 is a well-known, publically available, complex, cryptographic program code (also described as a cryptographic checksum or hashing algorithm) that produces a 128-bit output from its inputs, or the equivalent of 16 characters of information (the SHA-1 output is 160-bits). This is so regardless of the size or substance or nature of the inputs.¹⁹ (Trial Tr. 187-88, Mar. 25, 2009.) It is indisputably a "one-way" algorithm; that is, from its 16-character output it is impossible to go backwards or "go back and get the information" forming the input. (Id. at 188:14-17.) It is also settled that MD5 uses, at least in part, a form of mathematical addition, although this is where the parties part ways. (Trial Tr. 122:21-23, Mar. 25, 2009 (by Mr. Klausner, "[n]ow, I'm not saying [addition is] all that MD5 does, but that's a significant

¹⁸ SHA-1 was described as an "evolution" of MD5 and for instant purposes the parties treat them the same -- either both meet the limitation or neither does. For brevity, the Court will refer to MD-5 and note if SHA-1 differs in any material respect.

¹⁹ This means, as trial testimony revealed, that the entire contents of the New York city phone book, the local public library and/or several feature length movies could be processed through MD5 or SHA-1 to create a 128 or 160 bit output.

portion"); Def.'s Motion for JMOL (Doc. No. 369-2 p. 25) (acknowledging "there is no dispute that MD5 and SHA-1 use, within their broader algorithmic structures, a form of addition").)

At trial, Uniloc primarily relied on testimony by Mr. Klausner, an independent computer consultant. He explained to the jury how the algorithms operate but, as will be discussed, did not explicitly opine they were LUID generating means under Claim 19:

The guts of this Message Digest - the word "digest," by the way, is used because a digest, as in Reader's Digest, I guess I might be showing my age, I used to get the Reader's Digest books and read them because they were shorter than the full novel. A Message Digest means it takes whatever message it receives and makes a digest of it. It does it by doing addition and multiplication in a series of rounds over and over again. It takes a piece of the input, adds and shifts it. It does a number of other operations, what are called logical operations in mathematics. But the essence is it eventually adds each of the results of these piece-wise operations into a bucket or a hash, and that hash becomes the output of the algorithm.

(Trial Tr. 31:21-32:11, Mar. 25, 2009.)

[The MD5] uses addition by taking pieces, one piece at a time, and working on it and then adding it to a bucket. I'll call it a bucket or a result . . . [n]ow it uses two kinds of operations - actually, more than two kinds, but two primary kinds of operation to do its work. One is addition, summing; and the other is what we call left shifting. Now, left shifting is actually nothing more than multiplication. So for example, if I have the number two and I multiply it three times, I get six. What I'm actually doing is taking the number two, adding it three times to get six. So multiplication is nothing more than addition done over and over again . . . [s]o getting back to the way the MD5 . . . works, is it summarizes the entire message into a shortened form by using addition. And that shortened form is the result of the Message Digest 5, and that result is called a message hash or an MD5 sum.

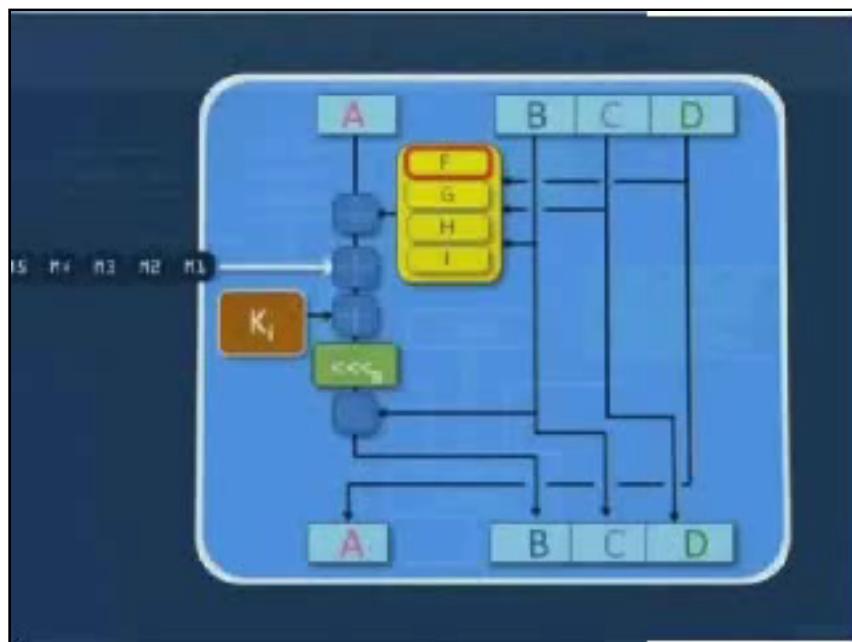
(*Id.* at 33:20-35:12.)

Microsoft responded with Dr. Dan Wallach, an Associate Professor of Computer Science at Rice University. Uniloc does not, and cannot, dispute that Dr. Wallach testified in far greater detail about the operation of MD5. Importantly, his demonstration of what the source code does stands unchallenged. (*See generally* Trial Tr. Mar. 31, 2009.) Dr. Wallach described three components to MD5. The first involves four different and separate series of one-way compressive functions, which are "teeny tiny versions" of MD5 that compress fixed-size pieces of the input to each produce an output. (Trial Tr. 146:20, 163:10-11, Mar. 31, 2009) ("And at the end, we've compressed 32 times three bits down to only 32 bits").) The second, to which Microsoft and fact witness Prof. Martin Hellman refer as modulo addition, uses a circular shifting function on pieces of the inputs where "digits fall off the top and show back in the bottom again." (*Id.* at 146:6-11.)²⁰ Dr. Wallach's contrast of this mathematical circular shifting with the left-shifting multiplication described by Mr. Klausner went undisputed. (Trial Tr. 116:22-118:22, Apr. 1, 2009 (explaining benefit of circular shifting versus left shifting, where instead of getting

²⁰ Prof. Hellman, the inventor of Microsoft's primary invalidity reference, was permitted to testify as a fact witness about his invention and the state of the prior art. He described modulo addition as a form of arithmetic with a "maximum size," such as when a person (at least one not in the military) tells time: the maximum size is 12:00, and you subtract the modulus 12 from 13 to get 1:00. (Trial Tr. 80:23-81:21, Mar. 31, 2009.)

"rolled over" and moved around in a type of logical circle the left-shifted bits simply get "pushed off the edge").) The final MD5 "mixing" function, to which cryptographers refer as "turning the crank," modifies the structure of the bits by, in essence, swapping their structure and order 64 times. (Trial Tr. 164:9-20, Mar. 31, 2009; see generally Trial Ex. U-9 (hard copy demonstrative slides) and Ex. T-9a (animation).) The T-9a animation, combined with Dr. Wallach's explanation of the operation of MD5 (Trial Tr. 157:21-166:3, Mar. 31, 2009), is perhaps the most effective explanation of how the algorithms actually work. (Clicking on the screen below will replay the T-9a animation and Wallach testimony.)

(Click screen to begin; escape to stop.)



Uniloc has not argued that the technical content of Dr. Wallach's description of the MD5 operation is erroneous or incomplete, and at trial presented no rebuttal evidence to his testimony.

Against this backdrop, the Court turns to the deceptively simple sounding question of whether the jury could have reasonably found that MD5 and SHA-1 are summation algorithms or summers or an equivalent. The landscape is muddied, though, because to this day it is unclear whether Uniloc asserts substantial evidence proved MD5 identical to a summation algorithm, or whether it stands up as equivalent. The question is somewhat academic, though, because under either analysis Uniloc's argument must fail. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1423 (Fed. Cir. 1997) ("Although equivalence is a factual matter normally reserved for a fact finder, the trial court should grant summary judgment in any case where no reasonable fact finder could find equivalence.").

What the '216 patent discloses is a simple combination of inputs by addition. By Mr. Klausner's testimony, MD5 does not do this. (Compare '216 patent, col. 11, 11. 53-60 with Trial Tr. 32:6-11, Mar. 25, 2009 (by Mr. Klausner about MD5, "[i]t does a number of other operations, what are called logical operations in mathematics").) The real inquiry, then, is whether based on this evidence the jury could have reasonably found MD5 equivalent because it performs some form of addition, in addition to its other

operations. See Ishida Co. v. Taylor, 221 F.3d 1310, 1317 (Fed. Cir. 2000) (noting device may infringe under § 112 ¶ 6 if it is "insubstantially different from the corresponding structure in the patent specification"); Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1268 (Fed. Cir. 1999). The unequivocal answer is no.

A simple comparison of MD5 as a whole to the algorithm Uniloc's patent discloses clearly reveals non-equivalence. While the existence of additional components or different steps does not per se preclude a structure from being considered substantially the same as another structure, the various non-additive mathematical operations in MD5 demonstrate significant (and undisputed) differences between MD5 and the summation algorithm in the '216 patent, which cannot be overstated. For example, the compressive, circular shifting and mixing functions fundamentally create a more secure result compared to an algorithm based in summation as the specification discloses. Indeed, the unchallenged evidence was that MD5's hallmark is the variety of its logical and mathematical steps to obtain a more secure result. (Trial Tr. 146:17-147:1, Mar. 31, 2009.) This complexity highlights the advantage of an irreversible one-way function with a fixed output, instead of an algorithm that uses a single type of reversible operation (with no fixed output), such as that disclosed in the patent. See Business Objects, S.A. v. Microstrategq, Inc., 393 F.3d 1366, 1370 (Fed. Cir. 2005) (describing differences between structure of invention

and "much more sophisticated approach" of accused products). By design, MD5 achieves its function in a way an algorithm based in summation could not. The two are hardly interchangeable, and the record does not support finding otherwise. See Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998).

Uniloc, of course, offers a different view. It highlights Mr. Klauser's description, the MD5 and SHA-1 source code that "demonstrates [they] perform summation" and documents it says amount to admissions by Microsoft, which alone provide substantial evidence upon which the jury could have relied. There is no question Mr. Klausner provided evidence that among other things, MD5 and SHA-1 perform some addition and multiplication.²¹ But

²¹ Mr. Klausner's expert report disclosed next to nothing about his opinions on hashing or summation or the left-shifting principles he discussed at trial. Upon objection, though the inadequacy easily could have warranted total exclusion, the Court avoided such a harsh result by allowing Mr. Klausner to give factual testimony about how the algorithms operate, but no opinion that MD5 and SHA-1 met Claim 19's generating means limitation. See Fed. R. Civ. P. 26 and 37. That good deed did not go unpunished. Mr. Klausner's factual "explanation" became an exercise in cleverly repeated buzz words designed to get his opinion across. Especially troubling was the "Readers Digest" theory of "summarization" which Mr. Klausner casually slipped in. This "theory" had never before been mentioned and was without a morsel of support in the '216 patent. It is telling that Uniloc does not use Mr. Klausner's "Readers Digest" theory to defend the verdict, even though Mr. Klauser switched back and forth between this and mathematical addition during his testimony. (See, e.g., Trial Tr. 34:19-35:12, Mar. 25, 2009.) All of this underscores the problem with relying upon Mr. Klausner's incomplete, oversimplified and frankly inappropriate explanation to support the verdict on this extremely technical question. There is serious reason to believe the jury

Uniloc's theory of "it is a summation algorithm because it has some addition" cannot hold up as a matter of law against what its patent discloses. A few lines in the multiple pages of single space computer code pertaining to a single mathematical aspect of an extremely complex algorithm cannot overcome Dr. Wallach's unrebutted and complete description that revealed the true complexity of the entire operation. (See Trial Ex. 1095 and 1096; Trial Tr. 95:3-11; 121:7-122:17, Mar. 25, 2009.) The skeletal disclosure in the '216 patent with three plus signs and the phrases "by addition" and "items to be summed" cannot be so broad as to capture within its scope (to one of ordinary skill in the art) virtually any and all software algorithms that include addition as one mathematical component, no matter how minor.²² Allowing the jury's embrace of Uniloc's simplistic and clever gloss on the patent's disclosed structure would, in effect, be an endorsement of its previously rejected "software (e.g., algorithm)" proposal from claim construction. This, in turn, would impermissibly broaden the

ignored Dr. Wallach's admittedly complex explanation and embraced Mr. Klausner's colloquial jargon to reach its verdict. Moreover, the inappropriate opinion testimony also supports Microsoft's motion for a new trial discussed infra.

²² It defies common sense to believe Mr. Richardson intended to capture every form of an algorithm that uses a mathematical function derived from or traced back to addition. Indeed, if that were the case it would be difficult to imagine what would not infringe. (See Trial Tr. 177:22-178:4, Mar. 24, 2009 (Mr. Klausner's voir dire testimony that all hashing algorithms are known to be summaries and would qualify merely because of an addition sign)..)

scope of Claim 19. See J&M Corp. v. Harley-Davidson, Inc., 269 F.3d 1360, 1367 (Fed. Cir. 2001) ("[T]he scope of such [means-plus-function] claim language is sharply limited to the structure disclosed in the specification and its equivalents."); see also Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (noting specification is usually dispositive and the single best guide to the meaning of a term); Finisar Corp., 523 F.3d at 1340 (noting options patentees have to express algorithms in "understandable terms" including as a mathematical formula, in prose, as a flow chart or "in any other manner that provides sufficient structure").

Finally, the documents on which Uniloc so heavily relies (Trial Ex. 35 (Visual Basic print out), 36 (computer dictionary), 43 (Windows Protocol Glossary), 50 (TechNet printout), 60 (Solution Finder print out), 61 (msdn print out) and 1103 (U.S. Patent No. 6,263,432 to NCR Corp.)) do nothing to change this result.²³ As it did for the jury, Uniloc points out selected phrases (which need not be repeated here) and asserts they provide the requisite proof.

²³ Uniloc heralds the NCR patent as appearing to use a summation algorithm to "represent" or be "equated to or exemplary of" the MD5 protocol. Upon further review, and with clearer vision in hindsight, the Court believes it should have stuck with its initial ruling to disallow this evidence. Such a third-party patent, unrelated to the litigation (obtained before trial by a witness who "looked up, did research on patents"), that happens to tie summation in some way to MD5 is not probative enough on the already complex issue of infringement to outweigh accompanying problems of confusion, hearsay and misleading evidence. (Trial Tr. 124:18-125:9, Mar. 25, 2009.)

In general, these documents all contain statements that more or less relate the MD5 or checksums or hashes to summation.

This documentary evidence suffers from the same infirmities as Mr. Klausner's MD5 testimony. Uniloc's approach, both to the jury and now the Court, is to boil down complex computer software programs to a kind of generic word find puzzle, that ignores how the allegedly infringing system actually works and, most important, the actual disclosure in the '216 patent. Some of these documents no doubt say MD5 and SHA-1 are a type of hash, or checksum. This is undisputed. But the fact that the word "hash" or the phrase "hash total" appears in the same sentence as "addition" (in documents unrelated to PA) is beside the point in the overall picture of what the evidence showed the complex hashes in this case actually do, and whether that is equivalent to the "by addition" structure Uniloc disclosed.²⁴ See Z4 Techs., Inc. v. Microsoft Corp., 507 F.3d 1340, 1353 (Fed. Cir. 2007) (substantial evidence is "more than a mere scintilla" and is "such relevant evidence as

²⁴ Uniloc's 30(b)(6) designee weighed in on this difference between a simple checksum that adds up bytes to obtain a total and an "untrivial hashing mechanism" such as MD5 that is "sufficiently complicated and non-reproducible." (Trial Tr. 100:21-103:6, Mar. 31, 2009.) Microsoft's argument as to the dispositive effect of this testimony is also misplaced. That Uniloc's corporate representative did not consider MD5 or SHA-1 equivalent to a summing operation because each is a "complicated hash" different from "adding things up" (and, later, that he did not really know the details of how each works) is important but simply adds another pound to the weight of the evidence. (Id. at 102:2-21); see infra Sec. VII (discussing motion for new trial).

a reasonable mind might accept as adequate to support a conclusion" (internal citations omitted). Moreover, while the Court disagrees with Microsoft that the Federal Circuit's holding in Centricut alone disposes of the issue, Uniloc's failure to proffer an expert opinion (or any testimony for that matter) in support of its interpretation of these technically nuanced documents adds yet another layer of deficiency. See Centricut, LLC. v. Esab Group, Inc., 390 F.3d 1361, 1369-70 (Fed. Cir. 2004) (holding that while there is no "per se" requirement of expert testimony to prove infringement when the art is complex, "typically" it is necessary) (citing Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1315 (Fed. Cir. 2002)).²⁵

The Court is compelled to stress that it recognizes the deference the jury's finding deserves, see Texas Instruments Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1570 (Fed. Cir. 1996), and is mindful that evidence weighing and assessment of the

²⁵ Centricut is not a perfect fit because although Uniloc lacked traditional expert opinion, Mr. Klausner is qualified and did offer factual information under the guise of opinion. In any event, especially on equivalents, Uniloc's pyramid of evidence collapses of its own weight under Rule 50. See AquaTex Indus., Inc. v. Techniche Solutions, 479 F.3d 1320, 1329 (Fed. Cir. 2007) (affirming summary judgment where plaintiff provided "lawyer argument and generalized testimony" and lacked particularized testimony on equivalence to link limitation to accused device); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1582 (Fed. Cir. 1996) ("[T]he doctrine of equivalents is not a license to ignore or erase structural . . . limitations of the claim . . . on which the public is entitled to rely in avoiding infringement.") (internal citation and quotation omitted).

credibility of experts (or any witness) is "not grist for the Rule 50(b) mill." Acevedo-Diaz, 1 F.3d at 68. The Court has reviewed the transcripts and evidence with painstaking detail in the light most favorable to Uniloc, careful not to act as the eleventh juror. What remains is a firm belief (indeed a certitude) that the jury "lacked a grasp of the issues before it" and reached a finding without a legally sufficient basis. Texas Instruments, 90 F.3d at 1570. Consequently, because it does not practice each limitation of Claim 19, Microsoft's PA does not infringe as a matter of law.

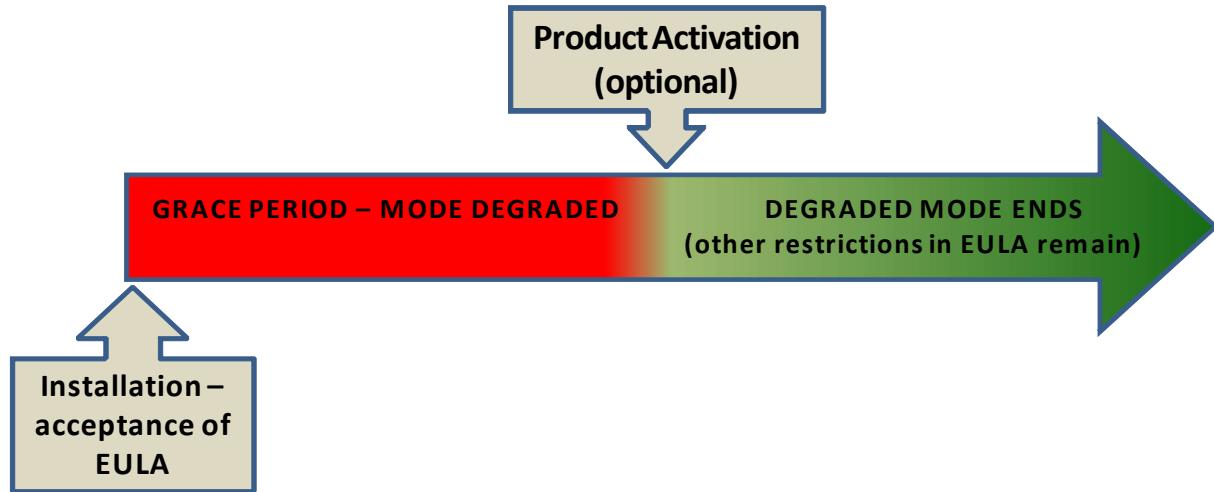
Having reached the conclusion that there is no infringement as a matter of law, the Court could stop and say no more. The Court will move on to address the final non-infringement controversy, however, because it too provides an independent basis for JMOL.

D. "Registration System" Using "Mode Switching Means"

Microsoft's last salvo on infringement involves an issue it debuted at summary judgment. It deals with when licensing occurs for its accused products and the relationship (or lack thereof) between licensing and PA, as it compares to what is called for in the '216 patent.

The term registration system was construed as "a system that allows digital data or software to run in a use mode on a platform if and only if an appropriate licensing procedure has been followed." Microsoft's position is that PA is a verification

technology; not a licensing procedure.²⁶ It cannot be a registration system because with the accused Microsoft products a user is already legally licensed, in accordance with the EULA, upon software installation -- often times long before activation, if activation even occurs. Thus, while the PA system (depicted in the diagram below) may attempt to "catch" non-compliant licensees who violate restrictions in the EULA, it does nothing by itself to create any legal relationship which allows the previously unlicensed user to use Microsoft's software.



²⁶ (See Trial Tr. 78:3:80:4, Mar. 26, 2009, by Mr. Hughes; Trial Tr. 16:1-18:10, Mar. 30, 2009, by Mr. Peiker.)

According to Microsoft, then, the accused products before activation (in the grace period) are in use mode under the Court's construction as a matter of law ("full use in accordance with the license") despite an inability to receive certain updates and upgrades, and despite having certain features disabled, such as print or save, after a specified number of uses (Office) or days (Windows). It follows in this argument that the "mode switching means" in Claim 19 that permits a user to go from an unlicensed demonstration mode²⁷ to a full use mode in accordance with a software vendor license agreement is absent -- and the jury's conclusion (argues Microsoft) is therefore legally erroneous.

Uniloc says this is nonsense, but has never been able to clearly articulate why. Some of Uniloc's difficulty here could be due to its confusion between the EULA and what Microsoft calls the digital license created at the Clearinghouse. Near the end of trial, it became clear Uniloc built its case around the digital license -- that is, that the digital license was the "license" that allowed a user to use the accused software to its fullest capacity. But the Court and Microsoft clearly understood that the claim construction involved the EULA.²⁸ Uniloc's evidence was that during

²⁷ See '216 patent, col. 6, ll. 47-48 (explaining software demonstration that typically has features such as save and/or print disabled) and col. 2, ll. 40-48 (explaining use mode as use of software so as to fulfill the licensor's obligations).

²⁸ (Compare Trial Tr. 222:25-230:11, Mar. 30, 2009 (Uniloc's counsel) ("We're talking about a digital license, not the EULA, for

the grace period the products have degraded features and cannot receive certain updates, and only switch into full use mode (where the functions become enabled) upon receipt of the digital license and eventual "match" on the user side during activation. (See Pl.'s Resp. to Def.'s Mot. for JMOL (Doc. 374, p. 27-29) (summarizing Trial Ex. 26, 73, 240, 242, 251, 259, 270, 434 and 608 as proof that full functionality is not available until activation).)

Even now, however, with the EULA front and center, the parties talk past each other. Uniloc continues to harp on evidence that shows that upon a match on the local side of the digital license in PA, the user is allowed to go from a demonstration mode to "typical" or "normal" use. (Doc. No. 274, p. 28.) To this day, it fails to explain why the undisputed grace period restrictions cannot allow for use in accordance with the provisions of the previously-accepted EULA, which informs licensees that their rights

god sakes. The patent-in-suit has nothing to do with the EULA. Nothing has anything to do with the EULA.") with id. at 223:19-20 (the Court) ("I don't know where you're getting that the EULA has nothing to do with this.")); see also '216 patent, fig. 2a, B1 ("License Info, Dialog Box: Details of New Licensing Agreement"). The Court clarified the point during conference and in jury instructions over Uniloc's half-hearted objection. (Conf. Tr. 5:13-14, Apr. 2, 2009.) In short, Uniloc was tripped up by semantics -- that Microsoft happened to name a digital value created by the series of steps discussed above a "license" (as opposed to, for example, a "signature" or "passcode") is irrelevant for purposes of what Claim 19 discloses. Moreover, Uniloc never argued equivalence to the jury on the basis that the EULA somehow combined with PA's digital license.

are limited and ultimately subject to the condition of activating the software for long term use. (See Trial Ex. B-5 and C-5 (EULAS) and Hr'g Tr. 84:3-17, July 8, 2009 ("Klausner testified that there is not full functionality when you get it, irrespective of this EULA, because you can't do upgrades and downgrades and that type of stuff.") (emphasis added).)

On JMOL, Uniloc maintains it is a factual question whether the jury believed Uniloc's contention that the software is not "fully functional" until activation; or whether it believed Microsoft that software is "fully functional" upon purchase. This is the wrong question. A layperson sense of typical or normal use of Office or Windows "irrespective" of the legal license is arbitrary and irrelevant. (See, e.g., Trial Tr. 155:12-16, Mar. 24, 2009 (Q: "Can they then use it for the intended time for which it was designed, namely, the next five or six years or so, then?" A: Yes. Actually, I'm still using Microsoft Office from 1997. So I've been using it for 12 years.")); Trial Ex. 26 ("Typical Windows functionality will not be accessible until activation is successfully completed.").)²⁹ The Court's construction requires the concept of full use to be defined by the baseline of the vendor license; it cannot exist in a vacuum. Indeed, under Uniloc's

²⁹ This is why Uniloc's "full use," "activation is required" and "registration" documents do not command a different result. Although relevant to Uniloc's common sense argument made to the jury, they have never been connected to the accused products, and specifically to the particular construction at issue here.

interpretation, Microsoft's customers would never achieve this fictional status of full or maximum use because the EULA prohibits licensees from doing all sorts of things even after activation, such as disassembling software or installing it on more than the specified number of computers. (See Trial Ex. B-5 and C-5.)

The point is that before a user can do anything with the software he must agree to the terms of the EULA; once this is done, the user becomes a licensee, and can use the software in accordance with the terms of the license, and with the provided functionality, until and unless the licensee activates through PA. And this grace period functionality is not trivial. For example, Office XP limits the licensee to 50 boots, and the product functions with all of its features during this time (the evidence was that on the 51st try, if the user does not activate most features become disabled). But if a user were to install the software, agree to the EULA and then not close the software for six months, it would function fully for that period of time, and have 49 boots remaining. This is clearly much more than a frisbee. (Trial Tr. 58:24-59:2, April 1, 2009.)

The long and short of it is this: as a matter of law, PA cannot be a registration system with mode switching means as that term has been construed. Uniloc deems this conclusion a hypertechnical trap contrived by Microsoft. But in this writer's view, it is the unavoidable (and correct) result -- one that in hindsight could have, and perhaps should have, been reached when

Microsoft first raised it as a summary judgment question of law for the Court, not the jury. It is undisputed that licensing of Microsoft's accused products takes place separate from and before activation. (See, e.g., Trial Tr. 171:1-172:16, Mar. 24, 2009.) Once the EULA is agreed to, Microsoft grants a limited license to use the software and then attempts to prevent casual copying by the licensee under the terms of the EULA through PA's user/Clearinghouse exchange. The invention in the '216 patent calls first for the exchange of communication with an intending licensee, and then (and only then) provides a "permit to licensed operation" of software if (and only if) the procedure is followed. '216 patent, Abstract; col.6, ll. 65. Simply put, in the '216 patent the registration system produces the licensee and creates the legal relationship of licensor/licensee; in Microsoft's process the license (and legal relationship) is created before, and is a predicate to, activation. Activation itself simply opens additional doors which were previously locked to the licensee. Besides simply saying it ain't so, Uniloc offers no principled argument as to why this difference in the two systems should not be dispositive of non-infringement on the question of Claim 19's "registration system" with "mode switching means."

V. Willful Infringement

Microsoft argues that even if the infringement verdict survives, Uniloc failed to meet its burden on willfulness. Proof

of willful infringement requires at least a showing of objective recklessness. In re Seagate Tech., LLC, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc). “[A] patentee must show by clear and convincing evidence that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent.” Id. at 1371. If this showing is made, a patentee “must also demonstrate that this objectively-defined risk (determined by the record developed in the infringement proceeding) was either known or so obvious that it should have been known to the accused infringer.” Id. This is a fact question Uniloc must prove by clear and convincing evidence. See Comark v. Commc’ns, Inc. v. Harris Corp., 156 F.3d 1182, 1190 (Fed. Cir. 1998).

For starters, Microsoft’s litigation conduct cannot meet Seagate’s threshold objective component. (See Trial Ex. 1101 (case travel stipulation).) Uniloc’s chief argument is that Microsoft recognized this Court’s summary judgment “same algorithm” error in 2007 but stayed silent to reap the benefits of infringement pending appeal. But no reasonable jury could find this conduct reckless. Microsoft made a tactical decision to concede a factual error at the appropriate time, Uniloc USA, 290 Fed. Appx. at 341, and had a right to press on appeal good-faith arguments that it deserved judgment for other reasons. See, e.g., id. at 345 (Michel, C.J. dissenting in part) (adopting construction of “unique” under which Microsoft would not infringe). In any event, for its part, Uniloc

never moved for reconsideration and had the Court denied summary judgment it still would have been a close call. Uniloc's only other plea on the issue of objective high risk is also without merit. Microsoft's reliance on a piece of prior art (Wolfe) cited during prosecution does not per se signal a baseless invalidity defense, especially where it was secondary to a primary reference (Hellman) that was never cited.³⁰

Of course, relevant to Seagate's first prong is the entire course of this litigation, which at first Uniloc hoped to dodge.³¹ Microsoft's arguments have had substantial support, required intensive factual review and resulted in almost all claims being either dismissed or dropped (as aptly summarized by Microsoft):

A case that at one point included claims of direct and indirect infringement of fourteen claims based on eight distinct theories resulted in an unappealed judgment of non-infringement of twelve claims, one claim dropped on the eve of trial,[³²] all indirect infringement claims

³⁰ Bard Peripheral Vascular, Inc. v. W.L. Gore Assocs., Inc., 586 F. Supp. 2d 1083, 1088-89 (D. Ariz. 2008) involved three of the same references before the PTO and does not announce the broad, automatic rule Uniloc urges. While in some cases reliance on cited prior art may be reckless, here it was not. See Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 1362 (Fed. Cir. 2007) (considering prior art before and not before examiner to find obviousness).

³¹ Early on at trial, Uniloc initially indicated its willfulness case did not involve post-suit conduct but shifted gears upon further discussion. (Trial Tr. 146:3-4, Mar. 25, 2009 ("Copying, right. It's all pre-suit conduct, correct.").)

³² After an impromptu pretrial discussion, Uniloc sought to resurrect a "Product Key Hash" argument to satisfy Claim 12's "checking by" limitation. Microsoft objected and Uniloc was ordered to explain why the theory was viable given that it

dropped on the eve of closing arguments, and only an allegation of direct infringement of a single claim under a single theory remaining.

This is hardly the stuff of which objectively reckless unreasonable conduct is made. See Cohesive Techs., Inc., v. Waters Corp., 543 F.3d 1351, 1374 (Fed. Cir. 2008) (objective prong not met where claim term was reasonably susceptible to a construction under which there would be no infringement); Black & Decker, Inc. v. Robert Bosch Tool Corp., 260 Fed. Appx. 284, 291 (Fed. Cir. 2008) ("[L]egitimate defenses to infringement claims and credible invalidity arguments demonstrate the lack of an objectively high likelihood that a party took actions constituting infringement of a valid patent.").³³

consistently said its prior theories were long gone and irrelevant. (Doc. No. 243.) Though the Court reserved ruling, it suspects Uniloc may have seen the procedural and substantive writing on the wall when it decided to drop Claim 12.

³³ Uniloc relies on a case it submitted after post-trial briefing and argument, to which Microsoft responded. See i4i Ltd. P'ship v. Microsoft Corp., No. 6:07CV113, 2009 WL 2449024 (E.D. Tex. Aug. 11, 2009); (Doc. No. 410, 411). Denying (among other things) Microsoft's JMOL motion on willfulness, the i4i court noted that "the number of creative defenses that Microsoft is able to muster in an infringement action after years of litigation and substantial discovery is irrelevant to the objective prong of the Seagate analysis" and focused on whether defenses would have been objectively reasonable and apparent before Microsoft infringed and was sued. Id. at *10. This Court is not convinced that such a "before and after" line is so easily drawn, or for that matter appropriate, to measure the objective likelihood (or lack thereof) that a party acted to infringe a valid patent. Suffice it to say the inquiry is case-specific and an objective view of the record here reveals the type of close factual calls (as to more than one limitation in Claim 19) the Federal Circuit has indicated support the instant finding. See DePuy Spine, Inc. v. Medtronic Sofamor

Given the dearth of clear and convincing evidentiary support under Seagate's first prong, it is doubtful the Court needs to reach the second. See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314, 1335-37 (Fed. Cir. 2009) ("Because we hold that DePuy failed as a matter of law to satisfy Seagate's first prong, we need not address DePuy's arguments concerning 'copying' . . . which [is] relevant only to Medtronic's mental state regarding its direct infringement under Seagate's second prong."). The Court will nevertheless examine Microsoft's subjective knowledge and supposed copying because the issues are relevant to the new trial request.

Uniloc says it proved by clear and convincing evidence Microsoft knew or should have known about the likelihood of infringement because it knew about and copied Mr. Richardson's invention. On the trial record no reasonable jury could reach this conclusion. Uniloc first notes its evidence that Mr. Richardson provided his "concept" to Microsoft for evaluation in 1993, subject to a non-disclosure agreement specifying that "certain elements"

Danek, Inc., 567 F.3d 1314, 1337 (Fed. Cir. 2009); see also Safoco, Inc. v. Cameron Int'l Corp., No. H-05-0739, --- F. Supp. ---, 2009 WL 2424108, at *21-23 (S.D. Tex. Jul. 31, 2009) (plaintiff could not prove willfulness where accused infringer presented close factual question on element involving technical differences between accused and patented devices).

were the "subject of a patent application."³⁴ (Trial Ex. 366.) This general reference cannot support finding a knowing risk of infringement of Claim 19. See State Indus., Inc. v. A.O. Smith Corp., 751 F.2d 1226, 1236 (Fed. Cir. 1985) ("Filing an application is no guarantee any patent will issue and a very substantial percentage of applications never result in patents. What the scope of claims in patents that do issue will be is something totally unforeseeable."); Trading Techs. Int'l, Inc. v. eSpeed, Inc., No. 04-C-5312, 2008 WL 63233, at *1 (N.D. Ill. Jan. 3, 2008) (knowledge of application alone does not demonstrate willfulness).

Shifting gears, Uniloc proposes the jury could have found Microsoft knew of Uniloc's patent because the '216 patent was published in 1996, and also cited in 1999 in the prosecution

³⁴ Mr. Richardson's anti-piracy "concept" was tested and rejected by an applications group after Mr. Richardson contacted the CEO of the Microsoft Institute in Australia. The Institute had been set up to develop the software industry in Australia by giving individual grants to companies that made an "approach" to Microsoft with a product or idea following Microsoft's public announcement of the program. (Trial Tr. 150-154, Mar. 23, 2009.) The CEO, Mr. Gledhill, testified that Mr. Richardson "would have contacted me, I assume by phone, saying that he would like to come and talk to me to see if I could give him assistance through MSI . . . he thought he had a software concept that he had developed that should be developed further, could be converted into a product for the marketplace to deal with software piracy." (Id. at. 156:3-22.) Mr. Gledhill said "Richardson was anxious" that Mr. Gledhill facilitate having Microsoft's headquarters in Redmond evaluate the technology. (Id. at 161:18-24.) Mr. Gledhill passed on Microsoft's response directly to Uniloc, with which it took no exception at the time. (Id. at 164, 172-175; Trial Ex. 133 ("Paul completed his look at Uniloc. It's security is minimal at best . . . [f]or high end apps I can say we would not participate in a scheme with this level of security.").)

history of a Microsoft patent (not PA) that issued in 2001 -- Larsson, U.S. Patent No. 6,226,747. (Trial Ex. 465, 466.) The publication point is a non-starter; if this was enough, every accused infringer with an internet connection or Washington D.C. metro pass (enabling travel to the PTO) would become a willful infringer. The needle-in-a-haystack Larsson theory cannot even partly justify the jury's finding, because it is undisputed that the early versions of PA were completed in 1996 and 1997 before Microsoft supposedly learned of the invention by way of the 1999 citation.³⁵ In sum, as a matter of law none of the record evidence comes close to providing a sufficient evidentiary foundation to justify finding that Microsoft acted in a willful, deliberate manner. See Honeywell Int'l Inc. v. Universal Avionics Sys. Corp., 585 F. Supp. 2d 636, 642-43 (D. Del 2008); Eastman Kodak Co. v. Agfa-Gevaert N.V., 560 F. Supp. 2d 227, 302 (W.D.N.Y. 2008) ("Willful infringement is not established by the simple fact of infringement, even where the accused has knowledge of the patents.") (internal citation omitted).

Building up on this foundation of supposed knowledge, the heart of Uniloc's case on willfulness was (and remains) copying. It contends the jury could properly find that: (1) Microsoft "reverse-engineered" and "hacked into" the sample Uniloc provided

³⁵ Though the existence of the Larsson citation was produced years prior, Uniloc disclosed the theory only a few weeks before trial. Over objection, it came in by the skin of Uniloc's teeth.

in 1993; (2) Microsoft lacked evidence of independent development and was gathering "competitive intelligence" in the field in 1995; and (3) the '216 patent was published months before David Pearce's June 1996 notebook notation purportedly disclosing the conception of PA at Microsoft.

Granted, with the benefit of every doubt it is possible to say that some of the circumstantial evidence discussed above could support an inference that someone at Microsoft had an opportunity to copy something relating to the invention embodied in the '216 patent. It would be a stretch, but it is not impossible to reach that conclusion. But this Court has a gatekeeping role with respect to the stringent Seagate standard, and Uniloc's inference upon inference could not, as a matter of law, have left jurors with a "clear conviction or firm belief" that Microsoft knew it infringed because it stole some idea of Uniloc's embedded in the '216 patent.

Uniloc's recurrent headline that Microsoft "went into the code and opened up the hood" is catchy, but it is not backed up by the facts. Mr. Richardson's testimony, combined with trial exhibits 132, 133 and 366, does not prove Microsoft did anything with the sample (or to it) besides what was asked of it: "normal end user testing of the Uniloc code to determine its viability for use with Microsoft's products." (Trial Ex. 132; see also Ex. X-6 (Uniloc discussing Microsoft's conclusion that the security was "fairly

easy to defeat" and hope that Uniloc could "get back to Microsoft fairly quickly . . . to regain credibility")..)

Moreover, Uniloc ignores the absolute lack of connection between the 1993 sample and David Pearce (or programmer Mr. Hughes for that matter), the inventors of PA. Neither worked for Microsoft in 1993, and Mr. Hughes lived and worked in Ireland, not Australia or Redmond. Uniloc's theory essentially required the jury to believe that some unknown Microsoft employee in Redmond who tested Uniloc's sample that was sent in 1993 actually "hacked" into the product and saved or passed on Uniloc's software, its code or some idea contained in it, to Mr. Pearce when he joined Microsoft three years later in 1996. Then, the jury must have assumed Mr. Pearce, in an elaborate effort to cover-up the theft, conjured up ideas and wrote them in a notebook with false dates, describing a request for proposals to send out to programmers for detailed implementation in the early forms of PA. The trial record makes such a leap in logic not just unreasonable but fantastic, especially within the framework of clear and convincing proof.

Uniloc's last shot is this: Mr. Pearce got the idea of "Machine ID incorporate with PID" a "mere" four months after the '216 patent issued, when he was gathering intelligence in the field. (Trial Ex. 0-2.) Proof that Microsoft (and others) surveyed possible solutions to a growing problem in the 1990s is a far cry from proving Mr. Pearce located, much less copied, some

idea or design in Claim 19 from a software company halfway around the world in Australia. Otherwise, again, all accused infringers who review trade publications or go to industry conferences would be branded willful copiers. In fact, Uniloc's only "evidence" here is the absence of greater detail in Mr. Pearce's notebooks -- a flawed substitute for the non-existent affirmative proof of deliberate copying (such as, for example, actual notations about the '216 patent, Uniloc, Mr. Richardson, Australia, or even Mr. Gledhill or the Microsoft Institute).

In sum, vast and overlapping evidentiary gaps doomed Uniloc's disjointed willfulness presentation from the start. Even if Seagate's first prong was satisfied (which it was not) the totality of circumstances point overwhelmingly against a known or obvious risk of infringement. The jury's conclusion of willfulness therefore must be set aside.

VI. Invalidity

Pursuant to 35 U.S.C. § 282, a patent claim is presumed valid and the burden of proving otherwise, by clear and convincing evidence, rests with Microsoft.³⁶ See Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 1359 (Fed. Cir. 2007). At trial, Microsoft argued

³⁶ Microsoft proffers that the preponderance of evidence standard should apply to prior art (Hellman) not before the PTO. Absent further guidance from the Federal Circuit, the Court declines to take this leap notwithstanding commentary that the rationale behind the presumption and heightened burden is "much diminished" when an examiner has never reviewed the art. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 426 (2007).

that Uniloc could not have it both ways. That is, if PA infringed then Claim 19 must be invalid as anticipated per 35 U.S.C. § 102, or obvious per 35 U.S.C. § 103. While the Court has discretion to decline to address these issues given its JMOL finding of no infringement, the Federal Circuit has recognized that in some circumstances it may be the better practice to tackle invalidity. See generally Phonometrics, Inc. v. N. Telecom Inc., 133 F.3d 1459, 1468 (Fed. Cir. 1998). Hoping for some finality, the Court pushes on.

A. Anticipation

Anticipation is a question of fact requiring "that the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation." Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citations omitted). To anticipate, a reference must disclose all elements "arranged as in the claim." Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1369-70 (Fed. Cir. 2008) (quoting Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1548 (Fed. Cir. 1983)). The jury's finding of no anticipation is reviewed for substantial evidence. Voda v. Cordis Corp., 536 F.3d 1311, 1322 (Fed. Cir. 2008).

Microsoft avers that Uniloc boxed itself in with an overbroad and inconsistent reading of the LUID and generating means: that is,

if the '216 patent can be read to capture PA, then all of Claim 19's limitations are found within U.S. Patent No. 4,658,093 (Hellman) issued on April 14, 1987. See Ecolab, Inc. v. FMC Corp., 569 F.3d 1335, 1348 (Fed. Cir. 2009) ("Under well-established law, '[t]hat which would literally infringe if later in time anticipates if earlier than the date of invention.'") (quoting Lewmar Marine, Inc. v. Bariant, Inc., 827 F.2d 744, 747 (Fed. Cir. 1987)). Otherwise, Microsoft argues, if read correctly Claim 19 would not cover PA and admittedly Hellman would not anticipate. (Trial Tr. 56:20-57:9; 65, Apr. 7, 2009.) To put it in a slightly different light, if the output of the PA algorithm (the supposed LUID) in fact creates a unique identification (based on inputs such as the Product Key) and legal licensor/licensee relationship between Microsoft and a user; and, if MD5 and SHA-1 are summation algorithms, then Hellman has it all and anticipates Claim 19. Because "[c]laims may not be construed one way in order to obtain their allowance and in a different way against accused infringers" this theory is permissible -- though the Court wonders (in fact doubts) if the jury ever grasped it. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995); see Koito Mfg. Co. v. Turn-Key-Tech, LLC, 381 F.3d 1142, 1153 (Fed. Cir. 2004).³⁷

³⁷ For instant purposes the Court assumes infringement. Contrary to Uniloc's argument, Microsoft's JMOL motion here is not frivolous because it instructed the jury to answer "no" to the

Prof. Hellman's patent entitled "Software Distribution System" claims an authorization process and system aimed at software piracy. In general terms, it produces an authorization from inputs to identical algorithms on both the user and company side to tie software to a computer. It is undisputed that Hellman uses a cryptographic one-way hash function similar to PA. Microsoft argues that the following inputs to Hellman's algorithms, which produce output authorization code (A), are much more unique and associated with a user than the inputs in PA: a secret key identifier of the computer embodied in the hardware (SK), a random or nonrepeating number (R), the serial number, the software package name (H), the number of uses (N) and user billing information.

At the end of the day, the parties split over Hellman's random input R. The R value typically is generated from a "noisy amplifier", which is a piece of computer hardware. (Trial Tr. 45:10-46:6, Mar. 31, 2009; Hellman patent, col. 5, ll. 66-68 ("R is random number, counter value, or other non-repeating number generated by the base unit 12.")) Boiled down, this means R comes from the user's computer. Microsoft likens R to the random 25-digit string coming from the Product Key on the software case: if that alphanumeric value can form a unique association by virtue of a person typing it in, then so too must R, which a user writes down

verdict form's anticipation question if it found Microsoft did not infringe. Either Uniloc's counsel completely misses the point of Microsoft's argument, or Uniloc is the party being frivolous.

or phones in or otherwise transmits to the vendor with his or her personal information. Uniloc's retort is that Hellman discloses a hardware based system and says nothing about identifiers unique to a user and separate from the computer such as a Product Key. R, then, is platform-related information very different from a Product Key, and Hellman does not teach the unique user association called for in Claim 19. See Uniloc USA, 290 Fed. Appx. at 343-44.

At times, a prior art reference certainly can "speak[] for itself." Arthrocare Corp. v. Smith & Nephew, Inc., 406 F.3d 1365, 1374 (Fed. Cir. 2005); see Blackboard, Inc. v. Desire2Learn, Inc., 574 F.3d 1371, 1381 (Fed. Cir. 2009) (anticipation finding dictated by testimony of plaintiff's witnesses and evidence, regardless of ineffectiveness of accused infringer's expert). But caution is required to ensure this writer's judgment is not substituted for the jury's. And while the call is close it cannot be said Microsoft proved by clear and convincing evidence that Hellman teaches each limitation of Claim 19. To begin, Dr. Wallach did not conduct the typical explicit element-by-element comparison between Claim 19 and Hellman so as to connect the dots. Despite Professor Hellman's fact testimony, there was virtually no discussion of several other specific aspects of Claim 19 as they related to the reference, such as mode-switching means or registration system. These elements are not inherent in the patent itself, so the absence of rebuttal evidence from Uniloc, while interesting, does

not prove the point. And, while the post-trial arguments were illuminating on the issue (were this Court acting as fact-finder) the jury heard substantial evidence that the inputs to Prof. Hellman's cryptographic function are machine identifiers or otherwise generated by the manufacturer and are not unique to the user. (See, e.g., Trial Tr. 41-46; 54:9-18; 56:9-15, Mar. 31, 2009.) The evidence as a whole does not compel the conclusion urged by Microsoft that if the Product Key input from a user's software copy creates a unique association, then so too must Hellman's computer-generated (then user-transmitted) R value. The jury had just enough to resolve this question in Uniloc's favor, and substantial evidence supports the conclusion that Microsoft did not prove Hellman disclosed each limitation of Claim 19 as arranged therein.

B. Obviousness

In the alternative, Microsoft contends that Hellman comes "within a hairsbreadth" of anticipating Claim 19 and thus alone makes it obvious. Or, at minimum, Hellman, combined with U.S. Patent No. 4,796,220 (Wolfe), does so because the only modification in the '216 patent from Hellman is use of a summation algorithm instead of a cryptographic function.³⁸ Because Wolfe discloses such

³⁸ Stepping back to infringement for a moment, Wolfe provides a useful contrast as to what likely would qualify as an algorithm based in summation: "[T]he algorithm to calculate the permission code may be the sum of the RAM size plus the hard disk size, times the percent of free space." Wolfe, col. 7, ll. 35-38.

a commonly known summation algorithm, then, Claim 19 was actually a step backwards and plainly obvious. (See Def's Motion for JMOL (Doc. No. 369-2 p.53) ("Uniloc is not entitled to a patent claim for making the prior art worse.").)³⁹

A claim is obvious if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)). Although ultimately a question of law, underlying factual determinations are reviewed for substantial evidence. See Johns Hopkins Univ. v. Datascopic Corp., 543 F.3d 1342, 1345 (Fed. Cir. 2008); Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17 (1966) (discussing scope and content of the prior art; differences between the claims and the prior art; level of ordinary skill in the art; and secondary considerations, if any, of non-obviousness).

While not far from hitting the mark, Microsoft cannot satisfy the "exacting" JMOL standard on obviousness given its high burden.

³⁹ Wolfe's patent for a "Method of Controlling the Copying of Software" issued on Jan. 3, 1989 and was before the examiner. See '216 patent, col. 1, ll. 57-65 ("[Wolfe] discloses a system for unique recognition of a platform on which licensed software is to be executed. However, [it] does not contemplate or disclose utilization of information which is unique to the user or intended licensee as part of the registration process which is to be distinguished from identification of the platform upon which the software is proposed to be run.").

Marrero v. Goya of Puerto Rico, Inc., 304 F.3d 7, 22 (1st Cir. 2002). Its argument takes as a given that Hellman teaches a LUID, leaving the nature of the generating means (summation or cryptographic function) as the only difference filled in by Wolfe. But as explained above, the Court does not share this view because neither Hellman nor Wolfe disclose use of unique user information in lieu of a hardware identifier based system. So the fact that a summation algorithm would have been an obvious (or even inferior) substitute in 1996 is neither here nor there. It does not obviate all other limitations contained in Claim 19.

Moreover, Microsoft offered no evidence of motivation to modify Hellman, and although Dr. Wallach discussed the technical content of both references, he offered no opinion that the combination of the two, in the eyes of one of ordinary skill in the art, would satisfy all elements of Claim 19. While this lack of a run-of-the-mill invalidity presentation is not determinative, it is fair to describe Microsoft's evidence as more or less conclusory on this point. See NTP, 418 F.3d at 1325 (agreeing with district court that testimony that "failed to analyze and explain the claim language and which components of the prior art embodied each element" was "hardly enough" to meet high invalidity burden). The Court thus declines to override the jury's conclusion.⁴⁰

⁴⁰ Both parties make arguments directed to secondary considerations of non-obviousness. Although Uniloc's objective indicia are weak and often lack a nexus to the claimed invention

VII. Alternative Motion for New Trial

Under Fed. R. Civ. P. 50(c)(1), the Court must conditionally rule on Microsoft's Rule 59 request under the more lenient standard for a new trial, should the JMOL be vacated or reversed. A new trial is appropriate "if [the court] believes that the outcome is against the clear weight of the evidence such that upholding the verdict will result in a miscarriage of justice." Ramos v. Davis & Geck, Inc., 167 F.3d 727, 731 (1st Cir. 1999) (quoting Velazquez v. Figueroa-Gomez, 996 F.2d 425, 427 (1st Cir. 1993)). Discretion "must be exercised with due regard to the rights of both parties to have questions which are fairly open resolved finally by the jury at a single trial." Coffran v. Hitchcock Clinic, Inc., 683 F.2d 5, 6 (1st Cir. 1982).

Above all, Microsoft is not entitled to a new trial because the Court may have reached a different result if sitting as fact-finder. Velazquez, 996 F.2d at 428. Yet a second go-around may be in the cards if the Court believes "the result is manifestly unjust, and has some hope of a different outcome on retrial." Broderick v. Evans, 570 F.3d 68, 73 (1st Cir. 2009). The Court may weigh the evidence itself, and need not always view it in the light most favorable to the prevailing party. See Ins. Co. of N. Am. v. Musa, 785 F.2d 370, 375 (1st Cir. 1986) (citing 11C Charles Alan

(including the copying evidence), considering Microsoft's prima facie obviousness case the scale does not tip back in its favor.

Wright & Arthur R. Miller, Federal Practice and Procedure: Civil § 2806 (2nd ed. 1971)); United States v. Wilkerson, 251 F.3d 273, 278 (1st Cir. 2001) (noting court's broad discretion to weigh evidence and evaluate credibility); Jennings v. Pare, No. 03-572T, 2008 WL 2202429, at *2 (D.R.I. May. 27, 2008) (quoting DLC Mgmt. Corp. v. Town of Hyde Park, 163 F.3d 124, 134 (2d Cir. 1998)). A party may deserve a new trial based on a cumulation of events if "multiple errors synergistically achieve 'the critical mass necessary to cast a shadow upon the integrity of the verdict.'" Williams v. Drake, 146 F.3d 44, 49 (1st Cir. 1998) (quoting United States v. Sepulveda, 15 F.3d 1161, 1196 (1st Cir. 1993)).

Microsoft bases its request on the (1) clear weight of the evidence on the LUID and summation issues; (2) "infectious" copying evidence it says pervaded the trial; (3) lack of doctrine of equivalents evidence and ambiguity in the verdict form; and (4) flawed basis for damages and introduction of the entire market value of the accused products. Arguably (1) and (2) warrant a new trial. Dovetailed together, however, and topped off with (4), review of the record in the aggregate reveals that a new trial on liability and, if necessary, damages is clearly required to prevent a miscarriage of justice.⁴¹

⁴¹ Because the Court conditionally orders a new trial on other grounds, it need not address the question of whether Uniloc's scant equivalents evidence mandates a new trial given the verdict form (or whether Microsoft waived the point). See Gillespie v. Sears, Roebuck & Co., 386 F.3d 21, 29-30 (1st Cir. 2004).

There is serious error in the verdict for many reasons already addressed in connection with the JMOL motion. The clearest demonstration is the lopsided summation algorithm evidence with respect to MD5 and SHA-1. Moreover, having deemed Microsoft's subjective intent ultimately irrelevant, the Court cannot now say Uniloc's abundance of copying "evidence" was harmless insofar as its likelihood to confuse, distract and taint consideration of the other issues. See Eolas Techs., Inc. v. Microsoft Corp., 270 F. Supp. 2d 997, 1005 (N.D. Ill. 2003) (tentatively excluding "highly prejudicial" evidence of copying). It was no doubt for this reason Microsoft moved to exclude the evidence or bifurcate the issue so time and energy (and the jury's focus) could remain on the already complicated liability questions. Upon reflection, and with 20/20 hindsight, the Court now believes Microsoft's arguments that insinuation about copying would pass for proof were correct.

On damages, the Court has reconsidered Microsoft's primary points raised in slightly different form pretrial, but remains unpersuaded.⁴² Remittitur is also not an appropriate alternative remedy. Uniloc's damages expert Joseph Gemini's proposed reasonable royalty based on an assigned value of \$2.50 per new

⁴² See Uniloc USA, 2009 WL 691204 at *1-2 (denying challenge to use of 25% "rule of thumb" and \$10 value as basis for royalty calculation, and setting forth reasoning on foreign damages and special interrogatory); Monsanto Co. v. Ralph, 382 F.3d 1374, 1383 (Fed. Cir. 2004) (jury's award entitled to deference if not "grossly excessive or monstrous, clearly not supported by the evidence, or based only on speculation or guesswork").

activation (225,978,721), or \$564,946,803, however, did cross the line in one important respect.

Microsoft objected specifically under the entire market value rule to use of a demonstrative pie chart wherein Mr. Gemini compared this royalty against the total dollar volume of sales of the accused products (\$19.27 billion), showing that the damages amounted to a "mere" 2.9% of the entire pie. (See generally Trial Tr. 72-75, Mar. 27, 2009.) According to Mr. Gemini, this was simply a "check to determine whether that number was reasonable" given that \$564 million is "obviously . . . a significant amount of money." (Id. at 72:9-12.) The Court preliminarily allowed it but after hearing the testimony instructed counsel to stay away from the \$19 billion figure. Yet, the figure continued to rear its head through the backdoor during cross-examination of Microsoft's expert and in closing. (See, e.g., Trial Tr. 243:3-244:8, Apr. 1, 2009; Trial Tr. 22:2-23:7, Apr. 2, 2009; Trial Tr. 112:14-19, Apr. 7, 2009 ("[T]he notion of the \$7 million, that anybody is going to take \$7 million for 22 billion in infringing sales and 5 billion in additional revenue [from PA] and a .00003% royalty is nuts. Napper might think that's reasonable, but I think he's the only one."))⁴³ All of this, cumulatively, runs afoul of the entire market value rule.

⁴³ Although Microsoft did not continue to repeat an objection, it made its position on this evidence sufficiently clear to preserve the instant challenge.

The entire market value rule allows a patentee to recover damages based on the value of an entire apparatus containing several features only where the feature at issue (here, PA) constitutes the "basis for customer demand" or "substantially create[s] the value of the component parts." Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1549-50 (Fed. Cir. 1995) (en banc).⁴⁴ After Microsoft expressed concern over the issue, Uniloc conceded customers do not buy Office or Windows because of PA and said it would not base a royalty calculation on the entire market value of the products. (See Pl.'s Resp. to Mot. in Limine to Preclude Test. of Gemini (Doc. No. 229 p.12); Trial Tr. 165-66, Mar. 27, 2009.) Uniloc nonetheless defends its use of the pie chart and \$19 billion figure as a "check" on the reasonableness of Mr. Gemini's opinion (and unreasonableness of Mr. Napper's lump sum).

Uniloc's argument elevates form over substance. Although Uniloc did not offer a traditional royalty calculated as a percentage of overall product sales, use of a large pie stuffed with desirable features of Windows and Office to make a royalty slice for PA seem small and reasonable, combined with repeated references to the numbers under the guise of a "gut-check", encourages exactly what the rule seeks to prevent -- awarding damages far in excess of the contribution of the precise patented

⁴⁴ Uniloc did offer appropriate evidence of revenue directly attributable to PA.

invention. Given Uniloc's repeated use of the evidence with both experts and in closing, the impropriety and unfair prejudice is not insignificant. The \$19 billion cat was never put back into the bag even by Microsoft's cross-examination of Mr. Gemini and re-direct of Mr. Napper, and in spite of a final instruction that the jury "may not award damages based on Microsoft's entire revenue from all the accused products in the case." (Trial Tr. 161:24-162:1, Apr. 7, 2009.) The point is, it is impossible to know for sure how this evidence may have affected the jury's consideration of damages (or for that matter liability) but there is real reason for concern, and real reason to believe the jury used the \$19 billion figure to "check" its significant award of \$388,000,000 (no doubt based at least in part on Mr. Gemini's proposed royalty and \$2.50 per activation starting point). Should the need for a new trial arise, Microsoft is entitled to a new determination of damages without the taint of this irrelevant evidence, as well as a determination of infringement for the reasons outlined above.

VIII. Uniloc's Motion for Enhanced Damages and Permanent Injunction and Interest

Exploration of these issues need not detain the Court long. Having concluded that Microsoft deserves JMOL and, in the alternative, a new trial, confronting these remedies would be tantamount to rendering an advisory opinion on a contingency that may never arise.

IX. Motions to Amend/Correct Judgment

Lastly, both parties seek to alter the April 21, 2009 judgment pursuant to Fed. R. Civ. P. 59(e) and 60. Given the instant disposition, Microsoft's yet-to-be-heard inequitable conduct counterclaim and Uniloc's plea for supplemental damages (and belated request for post-judgment royalties, see Doc. No. 399) need not be addressed. There is no need to cross these bridges at this time.

X. Conclusion

In accordance with all of the above, Microsoft's Motion for Judgment as a Matter of Law or, In the Alternative, For a New Trial or Remittitur (Doc. No. 371) is GRANTED IN PART AND DENIED IN PART. Uniloc's Motion for an Award of Enhanced Damages, for Prejudgment and Postjudgment Interest, and for a Permanent Injunction (Doc. No. 368) is DENIED AS MOOT. Both Motions to Amend/Correct Judgment (Doc. Nos. 367, 370) and Microsoft's Motion to Strike Improper Matter from Plaintiffs' Reply (Doc. No. 392) are DENIED AS MOOT. The verdict of the jury is VACATED. JUDGMENT shall enter for the Defendant Microsoft.

IT IS SO ORDERED.

/s/William E. Smith
William E. Smith
United States District Judge
Date: September 29, 2009